IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please cancel claims 1-12 and add new claims 13-32 in accordance with the following:

1-12 (Cancelled)

13. (New) A method for synchronizing a radio communication system divided up into radio cells, comprising:

transmitting data by a timeslot multiple access method with each radio cell having a base station for providing radio coverage to a plurality of mobile stations assigned to the radio cell;

receiving at each base station signals from mobile stations assigned to the radio cell of the base station and signals from mobile stations assigned to adjacent radio cells;

determining the number of mobile stations at the base station, on the basis of the signals received from the mobile stations and comparing the number at the base station with a predefined threshold value;

if the number of mobile stations is below the threshold value, then using a first synchronization method for synchronizing the base station and the mobile stations assigned to the base station, the first synchronization method corresponding to an assigned transmission standard of the radio communication system;

if the number of mobile stations exceeds the threshold value, then using a second synchronization method in which the base station evaluates the signals received from the mobile stations to determine a time synchronization value and a frequency synchronization value to which the base station synchronizes itself;

if the number of mobile stations exceeds the threshold value, then receiving at the mobile station a signal from the base station of the radio cell to which the mobile station is assigned and signals from base stations of adjacent radio cells; and

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if the number of mobile stations exceeds the threshold value, then evaluating the base station signals received at the mobile station to determine a time synchronization value and a frequency synchronization value to which the mobile station synchronizes itself.

14. (New) The method as claimed in claim 13, wherein base stations of adjacent radio cells use radio transmission resources from a stock that is collectively assigned to the base stations for data transmission purposes.

15. (New) The method as claimed in claim 13, wherein with the second synchronization method each base station uses timeslots from carrier frequencies collectively assigned to the base station and base stations of adjacent radio cells, the timeslots being used as radio transmission resources.

16. (New) The method as claimed in claim 13, wherein

with the second synchronization method base stations of at least two adjacent radio cells simultaneously and jointly employ a common timeslot of a common carrier frequency for providing radio coverage to respectively assigned mobile stations, and

the common timeslot is selected from collectively assigned radio transmission resources taking account of an interference situation in the common timeslot.

17. (New) The method as claimed in one of the preceding claims, wherein with the second synchronization method both the base station and the mobile stations adjust carrier frequencies and timeslot transmitting instants on a subscriber-specific basis.

18. (New) The method as claimed in one of the preceding claims, wherein co-channel interference is minimized at the base station and/or the mobile stations using an interference suppression method.

19. (New) The method as claimed in claim 13, wherein radio transmission resources are assigned at each base station in such a way that co-channel interference on adjacent radio cells is minimized.

20. (New) The method as claimed in claim 13, wherein the radio communication system uses an OFDM radio transmission method.

21. (New) The method as claimed in claim 13, wherein the radio communication system uses a TDD or FDD radio transmission method.

22. (New) The method as claimed in claim 13, wherein with the second synchronization method a time deviation is determined by correlation and a frequency deviation is determined by ascertaining a phase rotation of consecutive symbols following a transformation into the frequency range.

23. (New) The method as claimed in claim 13, wherein the second synchronization method is performed without additional signaling using a higher protocol layer between the base station and mobile stations assigned to the radio cell of the base station.

24. (New) The method as claimed in claim 13, wherein to select the first or second synchronization method, the number of mobile stations is compared using a time-dependent hysteresis function specified by a threshold value range.

25. (New) The method as claimed in claim 14, wherein with the second synchronization method each base station uses timeslots from carrier frequencies collectively assigned to the base station and base stations of adjacent radio cells, the timeslots being used as radio transmission resources.

26. (New) The method as claimed in claim 25, wherein
with the second synchronization method base stations of at least two adjacent radio cells simultaneously and jointly employ a common timeslot of a common carrier frequency for providing radio coverage to respectively assigned mobile stations, and
the common timeslot is selected from collectively assigned radio transmission resources taking account of an interference situation in the common timeslot.

27. (New) The method as claimed in 26, wherein with the second synchronization method both the base station and the mobile stations adjust carrier frequencies and timeslot transmitting instants on a subscriber-specific basis.

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28. (New) The method as claimed in 27, wherein co-channel interference is minimized at the base station and/or the mobile stations using an interference suppression method.

29. (New) The method as claimed in claim 28, wherein radio transmission resources are assigned at each base station in such a way that co-channel interference on adjacent radio cells is minimized.

30. (New) The method as claimed in claim 29, wherein the radio communication system uses an OFDM radio transmission method.

31. (New) The method as claimed in claim 30, wherein the radio communication system uses a TDD or FDD radio transmission method.

32. (New) The method as claimed in claim 31, wherein with the second synchronization method a time deviation is determined by correlation and a frequency deviation is determined by ascertaining a phase rotation of consecutive symbols following a transformation into the frequency range.